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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/552,576	04/19/2000	William J. Oswald	9840-041-999	3976
24341	7590	10/16/2003	EXAMINER	
Pennie & Edmonds, LLP 3300 Hillview Avenue Palo Alto, CA 94304			BARRY, CHESTER T	
			ART UNIT	PAPER NUMBER
			1724	

DATE MAILED: 10/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/552,576	Applicant(s) OSWALD ET AL.	
	Examiner Chester T. Barry	Art Unit 1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2, 15 - 16, 25 - 27, 34 - 45, 47 - 59, 61 - 73, 75 - 78 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2, 15 - 16, 25 - 27, 34 - 45, 47 - 59, 61 - 73, 75 - 78 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: |

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Prosecution is re-opened.

Claims 61, 63 are rejected under 35 U.S.C. Sec. 112, 2nd parag., for failing to particularly point out and distinctly claim the subject matter for which patent protection is sought. It is unclear how the scope of these claims differ. Cancellation of one or the other is recommended.

Claims 61 is rejected under 35 U.S.C. Sec. 112, 2nd parag., for failing to particularly point out and distinctly claim the subject matter for which patent protection is sought. There is no antecedent basis for "said **outer** pond" (emphasis added).

Claims 2, 15 – 16, 25 – 27, 34 – 45, 47 – 59, 61 – 73, 75 – 78 are rejected under 35 U.S.C. Sec. 103(a) as obvious over the Green, Oswald, Lundquist article in view of Sheaffer and Locklair. The Oswald article describes all but the 6 m depth limitation. Sheaffer describes a substantially similar structure in which the fermentation pit depth is 14.5 ft. Sheaffer teaches, however, that the depth could be "much greater."

As illustrated in FIG. 2, treatment cell 24 may be formed as a substantially frustoconical space which is about 14.5 feet deep from the pond surface as it exists (near its planned capacity), about 12 to 17 feet in diameter, and preferably about 15 feet in diameter at bottom 51, and having sidewalls 50 with a minimum slope of about 0.5:1 (run:rise). The sidewalls 50 form a shoulder with the general bottom of storage volume 28.

For proper operation, the difference between the depth of cell 24 and the more general depth 26 of storage volume 28 should be at least nine to twelve feet, and preferably is about 11½ feet, although it could be much greater. For a single, four-bedroom residence application, the minimum liquid capacity of the treatment cell 24 should be at least 2,000 gallons, and more preferably at least 2,800 gallons. The outlet of wastewater introduction pipe 18 is positioned deep within the treatment cell 24 near, such as six inches from, the bottom 51 of cell 24, and below aerator 48. For flows similar to those generated in the illustrated embodiment, pipe 18 should have an inner diameter of at least two inches.

Treatment cell 24 may take any of several shapes, as long

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The exposed area of the outer pond is 0.0183 hectare.¹

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and the cessation of discharge because of flooding or slow percolation. Storage volume 28 may, in some instances, be 1w or less.

In one exemplary embodiment, storage volume 28 is about two and one-half feet deep at its greatest extent (excluding the depth of the treatment volume) and its largest shore-to-shore diameter is 50 feet. It is preferred that the upper limit of storage volume 28 be at least two feet above elevation 26.

As is shown in FIG. 2, the aesthetics of storage volume 28

Locklair is cited to show that pond pit depths of up to 25 ft were known.

The air burst injection nozzle 60 and process of intermittent release of compressed air is compatible with numerous types of existing diffuser systems. For instance, an aerated treatment basin such as a typical activated sludge treatment basin, waste lagoon, or holding tank may be lined with air diffusers along its length. A typical basin has an average depth of 12-15 feet, though some basins are as much as 25 feet deep. Placement of the air burst mixing injectors at selected points within the basin can be used to achieve greater dissolved oxygen levels. The turbulent displacement also brings about increased mixing of the liquids.

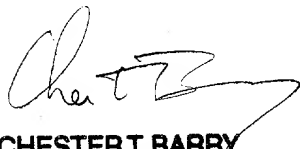
Therefore, it would have been obvious to have increased the depth of the Oswald et al. fermentation pit to between 14.5 and 25 ft in view of Sheaffer's suggestion. The skilled artisan would have appreciated that larger HRT and more conversion of pollutants would result.

Claims 50 - 59, 61 - 73, 75 - 78 are rejected under 35 U.S.C. Sec. 103(a) as obvious over Sheaffer and Locklair, alone or further in view of Cretini. Sheaffer describes a substantially similar invention as that claimed, but one in which the fermentation pit depth is 14.5 ft, not 6 m. Sheaffer teaches, however, that the depth could be "much

¹ An exposed surface with diameter of 50 ft has an area of 0.0183 hectare.

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greater." Locklair is cited to show that aerated pond pit depths of up to 25 ft were known. Therefore, it would have been obvious to have increased the depth of the Sheaffer inner pond to between 14.5 and 25 ft in view of Sheaffer's suggestion. The wetlands vegetation effects photosynthetic oxygenation of the water as do the algae inherently present in sunlight-exposed waters of this type, as shown by Cretini (col 1 line 20-25; col 2 lines 1-5).

A handwritten signature in black ink, appearing to read 'Chestert T. Barry', with a stylized flourish at the end.

CHESTERT T. BARRY
PRIMARY EXAMINER

703-306-59231